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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JASON CLAY PEARSON,  
Douglas Stephens McWilliams, Gether Irick, Jr., and  
Max Allen Weaver

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Appeal 2010-004444  
Application 10/772,121  
Technology Center 1700

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Before LINDA M. GAUDETTE, MARK NAGUMO, and  
KAREN M. HASTINGS, *Administrative Patent Judges*.

NAGUMO, *Administrative Patent Judge*.

DECISION ON APPEAL

**A. Introduction<sup>1</sup>**

Jason Clay Pearson, Douglas Stephens McWilliams, Gether Irick, Jr., and Max Allen Weaver (“Pearson”) timely appeal under 35 U.S.C. § 134(a) from the final rejection<sup>2</sup> of claims 1, 3-33, and 68-71.<sup>3</sup> We have jurisdiction. 35 U.S.C. § 6. We REVERSE.

The subject matter on appeal relates to blends of polycarbonates and polyesters. Such blends are said to undergo undesirable transesterification reactions and colorization reactions due to the presence of residual metallic polycondensation catalysts used to manufacture polyesters. (Spec. 1 [0002].) The 121 Specification teaches that it is known to deactivate the metallic catalysts with phosphorus-containing compounds, which generate acidic species by partial hydrolysis over time and during extrusion processing. (*Id.*) The hydrolysis is said to be necessary for effective catalytic deactivation. (*Id.*) The acids, however, are said to reduce the hydrolytic stability of the polycarbonates and polyesters. (*Id.* at 2 [0003].) It is also known to add hindered amine light stabilizers (HALS) to improve the hydrolytic stability of certain phosphorus containing compounds, and hexamethylenetetramine is known to improve the

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<sup>1</sup> Application 10/772,121, *Polymer Blends*, filed 4 February 2004, as a continuation of 10/382,013, filed 5 March 2003, now abandoned. The specification is referred to as the “121 Specification,” and is cited as “Spec.” The real party in interest is listed as Eastman Chemical Company (Appeal Brief (first version), filed 4 January 2008 (“1stBr”), 1.)

<sup>2</sup> Office action mailed 3 July 2007 (“Final Rejection”; cited as “FR”).

<sup>3</sup> The Examiner indicates that the remaining claim, claim 72, is allowable. (FR 1.)

hydrolytic stability of polycarbonates stabilized with phosphorus-containing compounds. (*Id.* at [0003].)

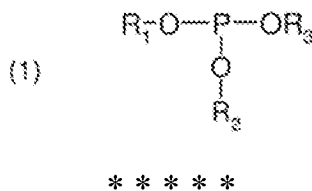
Appellants disclose and claim compositions comprising polycarbonates and polyesters stabilized with phosphorus-containing compounds and hindered amine light stabilizers that are said to exhibit unexpected improvements in hydrolytic stability and weatherability. (Spec. 3 [0005].)

Representative Claim 1 reads in most relevant part:<sup>4</sup>

1. A polymer blend comprising a mixture of:

- (A) at least one polyester prepared by the reaction of at least one diol with at least one dicarboxylic acid or dialkyl ester thereof in the presence of a metallic catalyst;
- (B) at least one phosphorus-containing compound;
- (C) at least one hindered amine light stabilizer; and
- (D) at least one polycarbonate,

wherein the phosphorus-containing compound is selected from the formulas (1)-(6):



wherein

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of C<sub>1</sub>-C<sub>22</sub>-alkyl, substituted C<sub>1</sub>-C<sub>22</sub>-alkyl,

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<sup>4</sup> The structures of the other phosphorus-containing compounds, formulas (2)-(6), are not relevant to the resolution of the present appeal, and are omitted for clarity.

C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, substituted C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, and  
heteroaryl;

\* \* \* \* \*

(1stBr, Claims App. A1-A2; indentation and paragraphing added.)

## **B. Patentability Arguments and Findings of Fact**

Findings of fact throughout this Opinion are supported by a preponderance of the evidence of record.

The Examiner maintains the following grounds of rejection:<sup>5</sup>

Claims 1, 3-33, and 68-71 stand rejected under 35 U.S.C. § 103(a) in view of the combined teachings of either Ono<sup>6</sup> or Hashimoto,<sup>7</sup> combined with any of Pierre,<sup>8</sup> Pfaendner,<sup>9</sup> Jackson,<sup>10</sup> Dickerson,<sup>11</sup> Jones,<sup>12</sup> or Jaen.<sup>13</sup>

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<sup>5</sup> Examiner's Answer (third version), mailed 16 July 2009 ("3dAns").

<sup>6</sup> Tetsushi Ono et al., *Flame Retardant Aromatic Polycarbonate Resin Composition and Molded Articles Thereof*, U.S. Patent 6,727,303 B2 (27 April 2004), based on an application filed 28 August 2002.

<sup>7</sup> Yoshihide Hashimoto et al., *Aromatic Polycarbonate Resin Composition*, U.S. Patent 6,780,917 B2 (24 August 2004), based on an application filed 28 February 2001.

<sup>8</sup> Jean R. Pierre and Peter H. Th. Vollenberg, U.S. Patent Application Publication 2003/0109629 A1 (12 June 2003), based on an application filed 19 October 2001.

<sup>9</sup> Rudolf Pfaendner et al., U.S. Patent 5,859,073 (1999).

<sup>10</sup> Winston J. Jackson, Jr., and Herbert F. Kuhfuss, U.S. Patent 4,287,325 (1981).

<sup>11</sup> James Palmer Dickerson et al., U.S. Patent 5,656,715 (1997).

<sup>12</sup> Allan Scott Jones et al., U.S. Patent 6,103,857 (2000).

<sup>13</sup> Jae-Young Jeon and Yoon-Hee Hong, U.S. Patent 6,342,579 B2 (2002).

According to the Examiner, “[t]he rejections over all other references used in the Final Rejections<sup>14</sup> are withdrawn by the examiner because said references are merely cumulative.” (Ans. 4.)

Pearson argues first that the Examiner failed to set out a *prima facie* case of obviousness because the rejection fails to conduct the fact finding and analysis set out by the Supreme Court in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966) necessary to arrive at the legal conclusion of obviousness. (Br. Supp.<sup>15</sup> 20.) In particular, Pearson argues that the Examiner failed to identify the difference or differences between the cited references and the rejected claims. (*Id.*) Moreover, Pearson argues, the Examiner failed to evaluate the evidence of unexpected results provided by the Examples in the 121 Specification, that had been raised during prosecution. (*Id.*) Pearson then repeats, essentially verbatim, those arguments. (*Id.* at 21, 1st para., *citing* the Office Action filed on 12 December 2006.) According to Pearson, Example 2 shows that a phosphite stabilizer provides improved color (less yellowness) compared to no stabilizer (Example 1) or only HALS as the additive (Example 6). (*Id.*) The blend of Example 2, however, exhibits decreased hydrolytic stability, especially of the polycarbonate component. (*Id.*) However, Pearson urges, Examples 3-5 show that blends that contain both a phosphite stabilizer and a HALS exhibit significantly improved hydrolytic stability compared to the controls. (*Id.*) “[A]t best,” Pearson concludes, “the Examiner has embarked

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<sup>14</sup> The Examiner relied on a total of 22 “secondary” references, each, as in the rejections maintained on appeal, in the alternative. (FR 2.)

<sup>15</sup> Supplement to the original Brief, filed 14 May 2009 (“Br. Supp.”).

upon the first step of a multi-step process, and the Examiner is attempting to improperly shift the burden onto Appellants to do the rest.” (*Id.*, last para.)

The Examiner finds that various components recited in the claims are “disclosed” by the references, and provides citations. (3dAns 3-4.) The Examiner then concludes that

[i]t would have been obvious to one having ordinary skill in the art, at the time the invention was made, to [use] the phosphites, the hindered amines and the monomers of the diacids and diols of the secondary references, in the shown ratios, in the compositions of the primary references, since they are all using polyesters and polycarbonates in similar compositions.

(*Id.* at 4, 1st para., last sentence.)

In response to Pearson’s unexpected results arguments, the Examiner argues that the primary references “disclose all the ingredients” of the claimed compositions, and accordingly, in the Examiner’s words, “they would exhibit the so-called unexpected results due to the presence of the HALS compounds and the phosphorus compounds discussed in applicants’ second reply and amendment<sup>[16]</sup>. Applicants have discovered a new property of a known composition. It is not patentable.” (3dAns 5, 1st para.)

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<sup>16</sup> Paper filed 12 December 2006, Amendment After Final, Remarks.

### C. Discussion

The statutory duties of the Board of Patent Appeals and Interferences include the “review [of] adverse decisions of examiners upon applications for patents.” 35 U.S.C. § 6(b). As our reviewing court has explained,

rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. This requirement is as much rooted in the Administrative Procedure Act, which ensures due process and non-arbitrary decisionmaking, as it is in § 103. [*In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (citations omitted), *cited with approval* in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).]

Thus, the Examiner’s mere recitation of facts—here, the disclosure of references—without any substantial discussion of why the combination or constellation of facts supports the legal determination of obviousness, immediately raises questions as to the adequacy of the prima facie case of obviousness.

We must not, however, lose sight of the nature of the patent examination process. Examination involves a discussion between a technically knowledgeable Examiner and the applicants, who are of at least ordinary skill in the art, mediated by an attorney or agent who is registered to practice before the Office. The attorney is required to possess “the legal, scientific, and technical qualifications necessary for him or her to render applicants valuable service.” 37 C.F.R. § 11.7(a)(2)(ii). Thus, all the participants are technologically adept, and, if not knowledgeable in the particulars of a given invention at the outset, can quickly “come up to



speed.” The discussions between such persons might well be less elaborative and explanatory than an appeal to a non-technical court.

The Board, which comprises administrative patent judges who must be “persons of competent legal knowledge and scientific ability,” 35 U.S.C. § 6(a), as a prudential matter, reasonably engages in a certain degree of “gap-filling” when evaluating the arguments of both the Examiner and the Appellants and when explaining its decision on the merits. Such gap filling does not, however, properly extend to finding facts and making factual inferences of which there is no hint from the record that the Examiner or Appellants considered.<sup>17</sup> Moreover, it is not the duty of the Board to search the record for evidence that might support the arguments of either the Examiner or the Appellants.

In the present case, we note first that Pearson only argues the patentability of claim 1. (Br. 20, 1st para.) All claims therefore stand or fall with that claim. 37 C.F.R. § 41.37(c)(vii).

Next we find that Ono and Hashimoto, which are commonly assigned to Teijin Chemicals, Ltd., are cumulative as to the disclosures most relevant to this appeal. Accordingly, we focus on Ono. Ono describes aromatic polycarbonate resin compositions that may contain 0 to 50 wt % of a polyester component (*see* claim 1 or the abstract), as well as other optional components, including phosphite compounds within the scope of component B, formula (1) recited in claim 1 (Ono col. 22, ll. 1-10, e.g.,

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<sup>17</sup> Unless the decision is denominated a new ground of rejection under 37 C.F.R. § 41.50(b).

trialkylphosphites as heat stabilizers), and HALS (*id.* at col. 28, ll. 9-12, hindered amines as light stabilizers). We note the Examiner indicates (3dAns 3), and Pearson does not dispute, that Ono describes polyesters made from diacids and diols in the presence of a metal catalyst, as required by claim 1. We assume, without deciding, that the Examiner did not find any exemplifications or express disclosures of compositions comprising the four required components, three of which are described as optional, because otherwise the Examiner would have rejected at least claim 1 as anticipated.<sup>18</sup>

The Examiner does not indicate which of the additional references are required to reject any particular claim. Indeed, the Examiner's rejection indicates that each principal reference, combined with any of the secondary references, suffices to reject all of the appealed claims. Moreover, the Examiner does not indicate that any particular functions are performed by the additives suggested by the secondary references. Thus, on the present record, we conclude that all of the references are at best cumulative with comparable teachings in Ono.

Nonetheless, the general disclosure that compounds meeting the limitations of components (B) and (C) recited in claim 1 may be added to a suggested blend of polymers covered by components (A) and (D), to obtain the function or property expected by those skilled in the art, suffices to establish a *prima facie* case of obviousness of blends covered by appealed claim 1. In the absence of a separate rejection of any identified dependent

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<sup>18</sup> The Examiner did reject certain claims as anticipated over other references during prosecution. *See, e.g.*, the Office Action mailed 8 September 2006, p. 2; and the Office Action mailed 17 March 2006, pp. 2 and 3.

claims, we have no occasion to explore the possibility that any of the independent claims might not be patentable because an adequate case of unpatentability has been made regarding a dependent claim.

We now turn to consider the arguments for and against unexpected results. The Examiner has not raised any doubts about the accuracy or reliability of the Examples in the 121 Specification on which Pearson relies. While the discovery of a new property does not render a pre-existing material patentable, that new property may be evidence that a material not previously made, even though *prima facie* obvious, is patentable if the new property was unexpected. The Examiner's position that the "obvious" compositions "would exhibit the so-called unexpected results" *supra* at page 6, second paragraph, is wrong as a matter of law. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993) ("That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.") (citation omitted). The evidence in favor of unexpected results outweighs the absence of evidence advanced by the Examiner.

#### **D. Order**

We REVERSE the rejection of claims 1, 3-33, and 68-71 under 35 U.S.C. § 103(a) in view of the combined teachings of either Ono or Hashimoto combined with any of Pierre, Pfaendner, Jackson, Dickerson, Jones, or Jaen.

REVERSED